What is claimed is:

1. An image forming apparatus using a high viscosity, high density developing liquid consisting of a carrier liquid and toner dispersed in said carrier liquid, said image forming apparatus comprising:

an image carrier;

latent image forming means for forming a latent image on said image carrier;

developing means for developing the latent image to thereby produce a corresponding toner image;

image transferring means for transferring the toner image from said image carrier to a recording medium; and

fixing means for fixing the toner image directly or indirectly transferred to the recording medium;

said developing means comprising at least one developer carrier for depositing the developing liquid thereon, and a coating member for coating said developing liquid on said developer carrier, said developer carrier conveying said developing liquid to a developing zone where said developer carrier faces said image carrier to thereby cause said developing liquid to develop the latent image formed on said image carrier;

wherein in the developing zone, the toner in the developing liquid, which faces an image portion of said image carrier where the latent image is formed, is caused

to move toward said image portion by electrophoresis to thereby form a toner layer in which the toner is present in the carrier liquid and a carrier layer in which the toner is absent in the carrier liquid, and

when said developer carrier and said image carrier moved away from the developing zone part from each other, the toner is caused to move toward the image portion over a degree at which the developing liquid can separate at a boundary between the toner layer and the carrier layer.

2. The apparatus as claimed in claim 1, wherein assuming a ratio of an amount of the developing liquid transferred from said developer carrier to said image carrier and deposited on the latent image to an amount of the developing liquid coated on said developer carrier is a transfer ratio, a development electric field and a developing time are selected such that when said developer carrier and said image carrier moved away from the developing zone part from each other, 90 % or more of the toner in the developing liquid, which faces a background of said image carrier where the latent image is absent, deposits on said developer carrier and such that said transfer ratio is 40 % or below on said background.

3. The apparatus as claimed in claim 2, wherein the development electric field and the developing time are selected such that when said developer carrier and said

image carrier moved away from the developing region part from each other, 95 % or more of the toner in the developing liquid, which faces the image portion, deposits on said image carrier and such that the transfer ratio is 90 % or below in said image portion.

4. The apparatus as claimed in claim 3, wherein said developer carrier is pressed against said image carrier to thereby form a nip, and a size of said nip is controlled to thereby control the developing time.

5. The apparatus as claimed in claim 4, wherein a surface of said developer carrier and a surface of said image carrier move in a same direction as each other in the developing zone and move substantially at a same speed as each other.

6. The apparatus as claimed in claim 5, wherein an amount of the developing liquid to be coated on said developer carrier is controlled such that a pigment content of the toner deposited on the surface of said developer carrier for 1 $cm^2$ is 4 μg or above, but 40 μg or below.

7. The apparatus as claimed in claim 6, further comprising cleaning means for cleaning the surface of said developer carrier.

8. The apparatus as claimed in claim 7, wherein said image carrier has a surface formed of a-Si (amorphous

silicon).

9. The apparatus as claimed in claim 1, wherein a surface of said developer carrier and a surface of said image carrier move in a same direction as each other in the developing zone and move substantially at a same speed as each other.

10. The apparatus as claimed in claim 9, wherein an amount of the developing liquid to be coated on said developer carrier is controlled such that a pigment content of the toner deposited on the surface of said developer carrier for 1 $cm^2$ is 4 μg or above, but 40 μg or below.

11. The apparatus as claimed in claim 10, further comprising cleaning means for cleaning the surface of said developer carrier.

12. The apparatus as claimed in claim 11, wherein said image carrier has a surface formed of a-Si.

13. The apparatus as claimed in claim 1, wherein an amount of the developing liquid to be coated on said developer carrier is controlled such that a pigment content of the toner deposited on the surface of said developer carrier for 1 $cm^2$ is 4 μg or above, but 40 μg or below.

14. The apparatus as claimed in claim 13, further comprising cleaning means for cleaning the surface of said

developer carrier.

15. The apparatus as claimed in claim 14, wherein said image carrier has a surface formed of a-Si.

16. The apparatus as claimed in claim 1 further comprising cleaning means for cleaning the surface of said developer carrier.

17. The apparatus as claimed in claim 16, wherein said image carrier has a surface formed of a-Si.

18. The apparatus as claimed in claim 1, wherein said image carrier has a surface formed of a-Si.

19. An image forming apparatus comprising:

an image carrier configured to form a latent image thereon;

a developer carrier configured to deposit thereon a high viscosity, high density developing carrier consisting of a carrier liquid and toner dispersed in said carrier liquid, said developing liquid developing the latent image formed on said image carrier;

electric field forming means for forming an electric field between said image carrier and said developer carrier;

wherein said electric field forming means forms a background electric field between a background of said image carrier where the latent image is absent and said developer carrier such that said background electric field

causes part of residual toner, which is left on said background after development, to remain on said background and attracts the other part of said residual toner toward said developer carrier to thereby remove said other part from said background; and

a toner movement ratio, which is a ratio of the toner moved from a region of said developer carrier carrying the developing liquid for developing the background to said background to the toner present in said region before development is selected such that the residual toner attracted toward said developer carrier does not cohere.

20. The apparatus as claimed in claim 19, wherein the toner movement ratio comprises a weight ratio of moved toner that is a ratio of a weight of the toner deposited on the background of said image carrier after development to a weight of the toner deposited on said region of said developer carrier before development.

21. The apparatus as claimed in claim 20, wherein said toner movement ratio or said weight ratio of moved toner comprises a background development ratio that is a ratio of image density on the background of said image carrier after development to image density in said region of said developer carrier before development.

22. The apparatus as claimed in claim 21, wherein said background development ratio is 10 % or above.

23. The apparatus as claimed in claim 22, wherein the developing time for the background is controlled to thereby control said background development ratio.

24. The apparatus as claimed in claim 23, further comprising a residual toner recycling mechanism configured to allow residual toner left on said developer carrier after development to be reused for development.

25. The apparatus as claimed in claim 24, further comprising:

a removing member for attracting residual toner left on the background of said image carrier after development to thereby remove said residual toner; and

removal electric field forming means for forming a removal electric field between the background of said image carrier and said removing member.

26. The apparatus as claimed in claim 25, wherein the toner contains a pigment, and a thickness of the developing liquid to be coated on said developer carrier is selected such that a pigment content of said toner deposited on a surface of said developer carrier for 1 $cm^2$ is 0.1 μg or above, but 2 μg or below.

27. The apparatus as claimed in claim 19, wherein said toner movement ratio or said weight ratio of moved toner comprises a background development ratio that is a ratio of image density on the background of said image

carrier after development to image density in said region of said developer carrier before development.

28. The apparatus as claimed in claim 27, wherein said background development ratio is 10 % or above.

29. The apparatus as claimed in claim 28, wherein the developing time for the background is controlled to thereby control said background development ratio.

30. The apparatus as claimed in claim 29, further comprising a residual toner recycling mechanism configured to allow residual toner left on said developer carrier after development to be reused for development.

31. The apparatus as claimed in claim 30, further comprising:

a removing member for attracting residual toner left on the background of said image carrier after development to thereby remove said residual toner; and

removal electric field forming means for forming a removal electric field between the background of said image carrier and said removing member.

32. The apparatus as claimed in claim 31, wherein the toner contains a pigment, and a thickness of the developing liquid to be coated on said developer carrier is selected such that a pigment content of said toner deposited on a surface of said developer carrier for 1 $cm^2$ is 0.1 μg or above, but 2 μg or below.

33. The apparatus as claimed in claim 19, further comprising a residual toner recycling mechanism configured to allow residual toner left on said developer carrier after development to be reused for development.

34. The apparatus as claimed in claim 33, further comprising:

a removing member for attracting residual toner left on the background of said image carrier after development to thereby remove said residual toner; and

removal electric field forming means for forming a removal electric field between the background of said image carrier and said removing member.

35. The apparatus as claimed in claim 34, wherein the toner contains a pigment, and a thickness of the developing liquid to be coated on said developer carrier is selected such that a pigment content of said toner deposited on a surface of said developer carrier for 1 $cm^2$ is 0.1 μg or above, but 2 μg or below.

36. The apparatus as claimed in claim 19, further comprising:

a removing member for attracting residual toner left on the background of said image carrier after development to thereby remove said residual toner; and

removal electric field forming means for forming a removal electric field between the background of said

image carrier and said removing member.

37. The apparatus as claimed in claim 36, wherein the toner contains a pigment, and a thickness of the developing liquid to be coated on said developer carrier is selected such that a pigment content of said toner deposited on a surface of said developer carrier for 1 $cm^2$ is 0.1 μg or above, but 2 μg or below.

38. The apparatus as claimed in claim 19, wherein the toner contains a pigment, and a thickness of the developing liquid to be coated on said developer carrier is selected such that a pigment content of said toner deposited on a surface of said developer carrier for 1 $cm^2$ is 0.1 μg or above, but 2 μg or below.

39. An image forming apparatus comprising:

an image carrier configured to form a latent image thereon;

a developer carrier configured to deposit thereon a high viscosity, high density developing carrier consisting of a carrier liquid and toner dispersed in said carrier liquid, said developing liquid developing the latent image formed on said image carrier;

electric field forming means for forming an electric field between said image carrier and said developer carrier;

wherein said electric field forming means forms a

background electric field between a background of said image carrier where the latent image is absent and said developer carrier such that said background electric field causes part of residual toner, which is left on said background after development, to remain on said background and attracts the other part of said residual toner toward said developer carrier to thereby remove said other part from said background; and

the background electric field has an absolute value equal to or smaller than a value that prevents the residual toner attracted toward said developer carrier from cohering.

40. The apparatus as claimed in claim 39, wherein the background electric field is $3.5 \times 10^7$ V/m or below in absolute value.

41. The apparatus as claimed in claim 40, further comprising a residual toner recycling mechanism configured to allow residual toner left on said developer carrier after development to be reused for development.

42. The apparatus as claimed in claim 41, further comprising:

a removing member for attracting residual toner left on the background of said image carrier after development to thereby remove said residual toner; and

removal electric field forming means for forming a

removal electric field between the background of said image carrier and said removing member.

43. The apparatus as claimed in claim 42, wherein the toner contains a pigment, and a thickness of the developing liquid to be coated on said developer carrier is selected such that a pigment content of said toner deposited on a surface of said developer carrier for 1 $cm^2$ is 0.1 μg or above, but 2 μg or below.

44. An image forming apparatus comprising:

a an image carrier configured to form a latent image thereon;

a developer carrier configured to deposit thereon a high viscosity, high density developing carrier consisting of a carrier liquid and toner dispersed in said carrier liquid, said developing liquid developing the latent image formed on said image carrier;

a removing member for attracting residual toner left on the background of said image carrier after development to thereby remove said residual toner; and

removal electric field forming means for forming a removal electric field between the background of said image carrier and said removing member;

wherein the background electric field has an absolute value equal to or smaller than a value that prevents the residual toner attracted toward said

developer carrier from cohering.

45. The apparatus as claimed in claim 44, wherein the background electric field is $5.0 \times 10^7$ V/m or below in absolute value.

46. The apparatus as claimed in claim 45, further comprising a residual toner recycling mechanism configured to allow residual toner left on said developer carrier after development to be reused for development.

47. The apparatus as claimed in claim 46, wherein the toner contains a pigment, and a thickness of the developing liquid to be coated on said developer carrier is selected such that a pigment content of said toner deposited on a surface of said developer carrier for 1 $cm^2$ is 0.1 μg or above, but 2 μg or below.

48. The apparatus as claimed in claim 44, further comprising a residual toner recycling mechanism configured to allow residual toner left on said developer carrier after development to be reused for development.

49. The apparatus as claimed in claim 48, wherein the toner contains a pigment, and a thickness of the developing liquid to be coated on said developer carrier is selected such that a pigment content of said toner deposited on a surface of said developer carrier for 1 $cm^2$ is 0.1 μg or above, but 2 μg or below.

50. An image forming apparatus using a high viscosity,

high density developing liquid consisting of a carrier liquid and toner dispersed in said carrier liquid, said image forming apparatus comprising:

an image carrier;

latent image forming means for forming a latent image on said image carrier;

developing means for developing the latent image with the developing liquid to thereby produce a corresponding toner image;

excess liquid removing means for removing an excess developing liquid from said image carrier after development to thereby regulate a film thickness; and

image transferring means for transferring the toner image from said image carrier to a recording medium;

said excess liquid removing means comprising:

a removing member held in contact with said image carrier and having a surface movable at substantially the same speed as a surface of said image carrier;

varying means for varying a liquid removing force of said removing means; and

control means for controlling said varying means in accordance with a property of the recording medium.

51. The apparatus as claimed in claim 50, wherein said removing member comprises a plurality of removing members, and said varying means comprises moving means for

selectively moving at least one of said plurality of removing members into or out of contact with said image carrier.

52. The apparatus as claimed in claim 51, wherein at least one of said removing member and said image carrier has an elastic layer on a surface thereof, and said varying means comprises pressure switching means for switching a pressure that presses said removing member against said image carrier.

53. The apparatus as claimed in claim 52, wherein said varying means comprises bias applying means configured to apply to said removing member an electric field that attracts excess toner floating between a background of said image carrier and said removing member toward said removing member, but does not peel off the toner deposited on an image portion of said image carrier, said bias applying means being capable of switching a size of said electric field.

54. The apparatus as claimed in claim 53, further comprising a cleaning member for cleaning the excess liquid from said removing member, wherein said varying means comprising cleaning member pressure switching means for switching a pressure that presses said cleaning member against said removing member.

55. The apparatus as claimed in claim 50, wherein

at least one of said removing member and said image carrier has an elastic layer on a surface thereof, and said varying means comprises pressure switching means for switching a pressure that presses said removing member against said image carrier.

56. The apparatus as claimed in claim 55, wherein said varying means comprises bias applying means configured to apply to said removing member an electric field that attracts excess toner floating between a background of said image carrier and said removing member toward said removing member, but does not peel off the toner deposited on an image portion of said image carrier, said bias applying means being capable of switching a size of said electric field.

57. The apparatus as claimed in claim 56, further comprising a cleaning member for cleaning the excess liquid from said removing member, wherein said varying means comprising cleaning member pressure switching means for switching a pressure that presses said cleaning member against said removing member.

58. The apparatus as claimed in claim 50, wherein said removing member comprises an endless belt, and said varying means comprises nip width switching means for switching a width of a removal nip over which said endless belt and said image carrier contact each other.

59. The apparatus as claimed in claim 58, wherein said varying means comprises bias applying means configured to apply to said removing member an electric field that attracts excess toner floating between a background of said image carrier and said removing member toward said removing member, but does not peel off the toner deposited on an image portion of said image carrier, said bias applying means being capable of switching a size of said electric field.

60. The apparatus as claimed in claim 59, further comprising a cleaning member for cleaning the excess liquid from said removing member, wherein said varying means comprising cleaning member pressure switching means for switching a pressure that presses said cleaning member against said removing member.

61. The apparatus as claimed in claim 50, wherein said varying means comprises bias applying means configured to apply to said removing member an electric field that attracts excess toner floating between a background of said image carrier and said removing member toward said removing member, but does not peel off the toner deposited on an image portion of said image carrier, said bias applying means being capable of switching a size of said electric field.

62. The apparatus as claimed in claim 61, further

comprising a cleaning member for cleaning the excess liquid from said removing member, wherein said varying means comprising cleaning member pressure switching means for switching a pressure that presses said cleaning member against said removing member.

63. The apparatus as claimed in claim 50, further comprising a cleaning member for cleaning the excess liquid from said removing member, wherein said varying means comprising cleaning member pressure switching means for switching a pressure that presses said cleaning member against said removing member.

64. In a method of controlling a liquid film of a toner image for an image forming apparatus that feeds a high viscosity, high density developing liquid, which consists of a carrier liquid and toner dispersed in said carrier liquid, to a surface of an image carrier carrying a latent image there to thereby develop said latent image, removes an excess developing liquid from said image carrier with excess liquid removing means to thereby control a liquid film, and then transfers a resulting toner image to a recording medium, said excess liquid removing means comprises a removing member held in contact with said image carrier and having a surface movable at substantially the same speed as a surface of said image carrier, and a liquid removing force of said removing means

is variable and switched in accordance with a property of the recording medium to thereby control said film thickness.